

# LABOR—HEALTH, EDUCATION, AND WELFARE APPROPRIATIONS FOR 1965

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## HEARINGS BEFORE THE SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS UNITED STATES SENATE EIGHTY-EIGHTH CONGRESS SECOND SESSION

ON

### H.R. 10809

MAKING APPROPRIATIONS FOR THE DEPARTMENTS OF LABOR  
AND HEALTH, EDUCATION, AND WELFARE, AND RELATED  
AGENCIES, FOR THE FISCAL YEAR ENDING JUNE 30, 1965, AND  
FOR OTHER PURPOSES

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#### PART 2

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(FRIDAY, MAY 22, 1964, THROUGH WEDNESDAY, JULY 1, 1964)

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DEPARTMENTS OF LABOR, AND HEALTH, EDUCATION,  
AND WELFARE, AND RELATED AGENCIES APPROPRIATIONS FOR 1965

WEDNESDAY, JULY 1, 1964

U.S. SENATE,  
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,  
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 1223, New Senate Office Building, Hon. Lister Hill (chairman of the subcommittee) presiding.

Present: Senators Hill and McGee.

STATEMENTS OF DR. SIDNEY FARBER, PROFESSOR OF PATHOLOGY, HARVARD MEDICAL SCHOOL; AND DR. R. LEE CLARK, DIRECTOR AND SURGEON IN CHIEF, M. D. ANDERSON HOSPITAL & TUMOR INSTITUTE, HOUSTON, TEX.

VARIETY CLUB HUMANITARIAN AWARD

Senator HILL. Dr. Farber, will you and Dr. Clark have seats there, please, sir?

Dr. Farber, one of my friends just handed me a clipping, a newspaper story I am very interested in seeing, from the Boston Herald of June 25, 1964:

INTERNATIONAL VARIETY CLUB PICKS DR. FARBER FOR AWARD

The International Variety Club Humanitarian Award this year goes to the renowned Dr. Sidney Farber, founder and scientific director of the Children's Cancer Research Foundation, more widely known as the Jimmy Fund.

For 37 years this coveted award has been given annually "to those men and women who have done the greatest amount of good for the greatest number of people."

CHOSEN BY BOARD

The choice is by a distinguished body of newspaper editors and former recipients of the award.

Previous recipients include Dr. Albert Schweitzer, former President Herbert Hoover, Sir Winston Churchill, and the late Gen. George C. Marshall.

May I congratulate you and more particularly congratulate the International Variety Club for their selection of you, sir.

I think it is very fine and tremendously gratifying. You richly deserve it, sir.

MEDICAL RESEARCH

Dr. FARBER. Thank you, sir.

Senator HILL. When I speak of dedicated doctors, I always cite you.

Dr. CLARK. That is the way we think of him, too, Senator.

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Do you all agree?  
Dr. FARBER. I agree with you, Mr. Chairman.  
Senator HILL. Is there anything else you gentlemen would like to add?  
Well, you have brought us some very fine testimony. It has been very challenging, I must say. We certainly appreciate it, gentlemen.  
Dr. CLARK. Thank you for the opportunity.  
Senator HILL. We thank you, Dr. Clark, and you, Dr. Farber.  
Dr. FARBER. Thank you, Mr. Chairman.  
Senator HILL. Dr. DeBakey, Dr. Lyons, and Dr. Stamler, will you come around, please?  
We are delighted to have you gentlemen here.  
How do you wish to proceed, now?  
Dr. Lyons? All right. You go right ahead, sir.

STATEMENTS OF DR. MICHAEL E. DeBAKEY, CHAIRMAN, DEPARTMENT OF SURGERY, BAYLOR UNIVERSITY COLLEGE OF MEDICINE, CHAIRMAN, PRESIDENT'S COMMISSION ON HEART DISEASE, CANCER, AND STROKE; DR. CHAMP LYONS, CHAIRMAN, DEPARTMENT OF SURGERY, UNIVERSITY OF ALABAMA MEDICAL SCHOOL; AND DR. JEREMIAH STAMLER, DIRECTOR OF HEART RESEARCH, CHICAGO BOARD OF HEALTH

PRESENTATION OF STATEMENT

Dr. LYONS. I would like to supply you, if I may, Senator, with a copy of my prepared testimony, to which I would like to speak roughly.

Senator HILL. All right. We will have this appear in full in the record, Doctor, and you may make such additional comments or statements as you see fit, sir.

DEPARTMENT OF SURGERY, UNIVERSITY OF ALABAMA MEDICAL SCHOOL

STATEMENT OF DR. CHAMP LYONS, CHAIRMAN

NATIONWIDE HEART RESEARCH PROGRAM

Dr. LYONS. We are especially appreciative of the privilege of appearing before you this morning to discuss the accomplishments, the opportunities, and the continuing obligations of the nationwide heart research program.

At the outset, I would like to acknowledge with great pleasure and place on the record the sentiments of my fellow scientists and their high regard for the scientific vision and professional wisdom of Senator Hill and the members of this Committee on Appropriations.

Those civilian scientists, like myself, who are engaged in cardiovascular research recognize that the support of the Congress in activities of the National Heart Institute constitute a partnership for the wise expenditure of Federal funds.

As you know, I have been a member of the Heart Council since 1961, and I am currently serving as chairman of the Council's Program Planning Committee.

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### CONCERN OVER ECONOMIES IN BUDGET

We are deeply concerned with the economies effected by the President's budget for 1965.

We realize that the present era is one of vociferous exaggeration of the right of the Federal Government to influence the destiny of man. We realize that much attention has been focused on the distribution of the tax dollar. We are fully aware of the fact that the average citizen does not accredit the National Institutes of Health nor this congressional program with the longevity and improved health which has come to him.

We believe that this reflects the fact that it has long been policy in the Heart Institute to confine its research support primarily to basic objectives, leaving to a third party, the physicians, the application of those principles to the welfare of the citizens, and they do not appreciate nor realize their obligation to Federal guidance and support in this area.

And we should use this later, I hope, effectively, to support the concepts of identifiable regional centers throughout the country, where physicians supported by this program and scientists supported by this program make a locally identifiable contribution to health care.

There is great opportunity to upgrade treatment programs, and I believe that this will carry the message to the individual person and increase our support.

But we must not deny them health and longevity simply because they do not understand our obligation goes beyond that.

### TRANSFERS OF BASIC DATA TO PRACTITIONERS

Unfortunately, the transfer of basic science data from the researcher to the practicing physician is a fairly complicated problem. Just to have a new scientific fact or a new physiologic principle rarely cures a person, just because it exists. It merely permits the formulation of a new approach, a new therapeutic program, wherein physicians must be trained, skills must be acquired, constant practice followed, and there must be adequate opportunity for followup and recording of the peculiar reaction of a specific medicament in man.

All too often, these new facilities require special equipment and special patterns of construction.

It may well be that the failure to provide these facilities at the local level will ultimately convince the people of where the support is coming for their health.

### CARDIOVASCULAR DISEASE IMPAIRMENT

Now, we are deeply concerned about the House approved budget and the President's budget for 1965, because we believe that it seriously impairs the integrity of the national research effort in cardiovascular disease.

In recent years, even the appropriated funds have been further reduced by an arbitrarily imposed reserve

Senator HILL. I spoke of cancer in connection with that reserve, the same thing.

Dr. LIONS. The same thing.

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Senator HILL. Except the Heart Institute was a little larger, I might say.

Dr. LYONS. We believe the present budget is really an economy budget. More than that, we believe for the current year it is spuriously derived from a failure to expand past budgets.

Now, there are several reasons that enter into this. Some of them I understand, and some of them are not quite as clear to me.

But I would point out that the Bureau of the Budget made an apportionment of your last year's appropriation in March of this year.

Senator HILL. Did not give you much time, did they?

Dr. LYONS. You cannot develop programs in an orderly fashion and guarantee support.

This business of the imposition of revenues is again an arbitrarily imposed across-the-board reserve imposed not in consultation with the Council or with the Institute but from above.

I should like to point out another example.

### UNDERGRADUATE TRAINING GRANTS

The Council approved and the Congress recommended that support for undergraduate training grants in cardiovascular sciences be increased from \$25,000 to \$40,000. Today, sir, we are still operating on that \$25,000-a-year allocation for medical schools, and in this way we fail to spend that additional money.

Now, the failure to expend the money here stems from failure to authorize from the Secretary's office, not from the wisdom of the civilian scientists who participated in this program.

This year's expenditures by the Heart Institute, even though the total budget we could expend was only known to us in mid-March, has resulted in our breaking the reserve and returning back from a \$7½ million reserve initially only \$3½ million, which we urgently need for the activation of already approved programs, but which we fear to activate, because in future years they would compete so heavily with ongoing research programs.

### ONGOING COMPETING CONTINUATION PROGRAMS

Now, we have two kinds of major programs which are carried out in relation to basic science. We have new programs coming in for approval in pay. Then we have what is known as ongoing competing continuation programs.

These are programs which are given initially for 4 or 5 years, with the idea of evaluating to see if they are producing. They come in, and if they are going to be extended in this same line of research, they have to compete with new grant money for their continuation.

### SPECIAL PURPOSE GRANT

Now, we have had to face the problem of the large special purpose grant which I will approach later, and which we should subsidize it with an ongoing continuation for several years in the future, when it might compromise our present ongoing program of basic research studies.

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The scientists who are active in the review of programs and the Council have felt that top priority should be assigned to the continuation of the basic science program, that if we stop that, we will dry up, so that it must be watered and fed and nurtured.

On the other hand, there is no question but that if we are going to bring the fruits of research to the people, we must subsidize programs of a special purpose which will bring the fruits of research to the people.

So we are in a dilemma. We are now in a situation where if the present budget be approved, we will have the greatest of difficulty in applying a fairly competitive priority number to the ongoing programs in a diverse number of basic science categories, and to a diverse number of patterns of grants.

It is going to be essential that some of the ongoing programs be terminated, because their priority is less than some of the new grants that are coming in, and this will have an extraordinarily disruptive and frustrating effect on a part of the Nation's scientists.

Even if no reserve be imposed this year, the proposed budget falls short by \$5 million of meeting the cost of ongoing programs and to support the current rate of new requests for research support. The President's budget provides \$12 million in this area.

The estimates of the available new research programs for the coming year go as high as \$20 million.

### MINIMUM FUNDS REQUEST

We are asking that as a basic minimum, we be allowed \$5 million additional, to bring this item of support up to approximately \$17 million, so that we can meet our current rate of payment of ongoing continuation, competing grants, and new grants.

Under the President's proposed budget, we are, as the Heart Council, completely sympathetic with the scientists who express the view that a limited budget should assign top priority to these ongoing programs.

It is an academically sound concept, but it certainly lacks the quality of developmental programs necessary to improve health care at the clinical level as rapidly as possible.

### COMPETITION BETWEEN TYPES OF GRANTS

The Council has therefore requested of its partner participants that a mechanism be worked out to prevent such competition between ongoing grants, new grants, and large special-purpose grants.

We have now programed a number of investigator programs that seek solution of clinically pressing problems. I should like to consider a few of these in detail. Most of them are well known to you.

### STUDY ON DIET AND HEART DISEASE

The first is the effect of diet on heart disease. Here we have initiated, on a feasibility basis, at a reasonably predictable cost of \$4 million, a study of this program.

If it can be demonstrated that people will follow a predetermined diet, and that useful data can be collected in this study, it should be possible to assess the role of the American diet in the area of atherosclerosis and heart disease.

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The cost of a finite study, however, would be great, and Congress and the scientists would have to make a value judgment on the wisdom of such an investment.

Much of practical importance, however, has already emerged from this feasibility trial, but any extension of this effort will require line-item subsidy. The feasibility trial is due to terminate next June.

### INTERIM SUBSIDY OF INVESTIGATIVE TEAMS

Now, we have a very considerable problem, here, whether, in the interim, we should have some interim subsidy of these investigative teams, to hold them together, pending the period required for completion of the feasibility trial report and the ultimate decision as regards extension of the program.

I cannot adequately present to you, sir, the alarm which is broadside in these splendidly organized teams and groups as to what they can do to hold their group together and what their future shall be.

We have no funds at the moment, and we have told these individuals that there are no funds to hold their teams together.

Dr. STAMLER. Excuse me, Mr. Lyons.

As one of the participants, later, perhaps, I could make a specific comment on that.

### EFFECTS OF DRUGS ON CORONARY HEART DISEASE

Dr. LYONS. Then we have a study of the effect of drugs on coronary heart disease, which I am sure you will want to comment on, too.

In the past year this committee has heard considerable testimony as to the effects of certain drugs in the prevention of coronary heart disease, and my colleague, Dr. Stamler, is an expert in this area.

The Council endorsed and supported 2 years of intensive planning by a group, 4 years of intensive planning by one individual. They drew up a protocol and a format of a cooperative study to answer this problem. It was approved as scientifically meritorious, last January. The proposed 7-year budget for this study totaled some \$26 million.

Although approving the investigative effort as proposed, the members of the Council expressed their concern that programs of this nature would compete for funds proposed with the usual project research grants.

In connection with this study, which would cost \$800,000 to initiate, the study will cost in subsequent years almost \$4 million per year.

Present estimates for approved payable new grants in 1965 go as high as \$20 million. The President's budget provides \$12,389,000. It is just impossible for us to activate this grant.

Now, when this was brought up before the House, we were given this recommendation:

### HOUSE COMMENT ON HEART DISEASE STUDY

Clearly, there is urgent need and present opportunity for expanded study of drug therapy, including use of hormonal substances, for the control of coronary heart disease. The committee, therefore, desires that an additional \$850,000 of the funds included in the bill be devoted to enlarging research along these lines.



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The committee understands that this would be a cooperative study, requiring engineered approaches, and utilizing tightly drawn research protocols, strict controls, and considerable data analysis. The demand made on program staff, therefore, will be of unusual magnitude. The committee understands that in subsequent years the support level of this study probably should rise to an annual rate of \$2 or \$3 million.

We find this a difficult recommendation to endorse and to live within, because of the severe restriction it will impose on ongoing programs. It is contrary to the wisdom of the scientists who are participating in the program and contrary to the wisdom of the Council.

So that we shall have to look to your committee, in its final resolution, for advice and assistance on how to proceed along these lines.

### DISSOLUTION OF STUDY GROUPS

Dr. Robert Wilkins, who is primarily responsible for this study, informs me that any further procrastination in payment will result in dissolution of the present study groups and a reluctance to consider any new joint study along these lines.

I sincerely believe that the failure to provide funds for these studies will seriously impair our ability to mount similar studies, certainly in the near future.

We have also gone to extreme lengths to program an artificial heart. There are many in this country who believe that artificial organs can be more quickly developed than transplantation techniques for organ substitution.

The practicability of machine substitution for the heart and lung is daily demonstrated in open heart operations. It has been too little emphasized that the physiologic tolerance for heart-lung machines begins to lessen after the first hour of use. Longer periods of use are complicated by injury to the red blood cells and failure of certain regulatory responses to blood flow, among other things.

There are good reasons to believe that longer periods of circulatory support, up to 7 days, would enormously enhance the chance for survival of patients with heart attacks and other serious illnesses.

### ARTIFICIAL HEART

It is apparent that physicists and engineers must cooperate with physiologists and surgeons to achieve this goal, as the first step toward an artificial heart. A start has already been made on this program, at a cost of \$2 million for 1965. This desperately needed apparatus will undoubtedly require even more support in future years.

Much of this material must be contracted to industry for the designation of certain plastics and other accouterments of the program.

We are making progress in this area. We would like not to be forced to conclude it in midstream.

### REGIONAL CARDIOVASCULAR INSTITUTES

You have heard from your cancer conferees the recommendation for regional cancer institutes. We, too, would like to make a plea for regional cardiovascular institutes.

Advances in arteriography have made it possible to study the blood vessels of the heart and brain as we never have before. They open up new opportunities for diagnosis and treatment of patients.

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I believe that we would be derelict in our duty if we did not identify the urgent need for new facilities and space at this time to activate clinical centers for the stroke problem.

### RESEARCH IN STROKES

Strokes constitute the third most important cause of death in this country. The lingering survivors of stroke are frequently permanently incapacitated and represent a staggering burden of heartache and suffering to themselves and to their families.

A major cause of strokes is atherosclerotic narrowing of blood vessels to the brain. The National Heart Institute Joint Study Group, composed of 24 participant institutions, has recently reported on a study of almost 2,000 patients with this type of cerebrovascular disease. It is now known that 73 percent of the patients who developed paralysis had prior warning episodes of transient neurological disturbances with complete recovery.

### PREVENTION OF STROKES

It has also been learned that of patients having these warning episodes, about half can have the obstructing plaque removed surgically, a fourth respond to a combination of medical and surgical treatment, and a fourth are benefited by medical treatment alone.

It seems that we should be able to prevent three-quarters of the strokes that now occur.

In an attempt to expedite this clinical development, the joint committee of the Council of the National Institute of Neurological Diseases and Blindness and the National Heart Institute, under the able chairmanship of Dr. Irving Wright, concerns itself with all phases of stroke research.

In association with the National Library of Medicine, we are now able to produce a current bibliography in this area at 6-month intervals, and this bibliography has increased from a little thin pamphlet to a full-sized volume every 6 months within the past year, as a result of these joint studies which have been organized in research support in this area.

### SPECIAL FACILITIES NEEDED

The major barrier to a broad clinical program in this area is the lack of the special skills and facilities to handle the patient load. The present hospitals just do not have enough facilities.

You commented about the dean saying we need more patient care and less science. Let us be honest. In the crowded conditions of our hospitals today, the investigator who retains certain administrative prerogatives as a responsible investigator feels more humanely considered and treated in his research laboratory than he does in these crowded hospitals that so desperately need to be brought up to the level where they can render superb patient care.

The Heart Council has recommended that a start be made on providing these special facilities at this time.

Senator HILL. Do you have an estimate of the cost?

### COST OF FACILITIES CONSTRUCTION

Dr. LYONS. A reasonable estimate of the 5-year cost of the needed construction for a few pilot centers is \$50 million in a 5-year period.

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The work of the President's commission merely lends urgency to the need to start a few pilot plants now, so that some experience may be gained in this area.

It seems to us that special purpose programs of this pattern should have full congressional consideration as special budgetary items, line items for long-term support, if we are to embark on them.

### LONG-RANGE SUPPORT

We would hope that there would be more mechanism to establish long-range support as line-item subsidies for programs which are prepared by your consulting scientists, brought to you for review, and any mechanism of further evaluation to be adopted, but to put them in so that they cannot become competitive with the ongoing program as now visualized.

This envisions, of course, I believe, that there will be a greater interest in a clinical program of development investigation in comparison with the present program, which I would call predominantly basic science.

I have submitted to you a budget for funding which was drawn up in January, and presented to the House, for the total extramural program, which totals \$149,162,000, as presented by us.

(The information referred to follows:)

#### *Proposed budget for National Heart Institute, fiscal year 1965*

#### Research grants:

I. Regular programs:		
Noncompeting continuations.....	\$59,628,000	
Competing continuations.....	10,493,000	
Supplementals.....	6,857,000	
Subtotal.....	76,978,000	
New grants: normal growth.....	14,460,000	
Total regular program.....	91,438,000	
II. Special programs:		
Drug study.....	2,500,000	
Artificial organs.....	2,000,000	
Cardiovascular centers:		
Research.....	\$3,000	
Resources and facilities.....	14,400	
Smoking.....	17,400,000	
General research support.....	2,000,000	
Scientific evaluation.....	9,133,000	
Subtotal special.....	125,000	
Total, research grants.....	33,158,000	\$124,596,000
III. Fellowships.....		7,695,000
IV. Training grants:		
Undergraduate training.....	3,992,000	
Graduate training.....	12,879,000	
Total training.....		16,871,000
Total grants.....		149,162,000

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### ONGOING AND NEW RESEARCH GRANTS

Dr. LYONS. Now, we realize that for many reasons it is a year of economy. We are here pleading for what we need, but we are begging for what we must have to endure as we are.

And we need, in addition to the President's budget and the House approved budget, \$5 million more for ongoing and new research grants, and we want desperately to start the drug study, but we want it to come in as a special addition to the funds, not to be taken out of currently appropriated funds nor ongoing research.

Thank you, sir.

Senator HILL. That is another very fine statement, I may say, Doctor, and challenging, too. It is very fine.

Dr. DeBakey?

### DEPARTMENT OF SURGERY, BAYLOR UNIVERSITY COLLEGE OF MEDICINE

#### STATEMENT OF DR. MICHAEL E. DeBAKEY, CHAIRMAN

##### PROGRAM DEVELOPMENT

Dr. DeBAKEY. Mr. Chairman, I must first also express my grateful appreciation for this opportunity to again appear before your committee, and my deep sense of appreciation for the leadership and the wisdom which you and your committee have demonstrated over the period of past years in bringing forward this program to its present level of development.

There can be no doubt in the mind of anyone who is practically engaged in this work that without the help your committees have given, it would not be possible to achieve the high status of the work in this area that is now going on in the scientific medical community.

Let me also say that I would like for the record, to indicate my strong endorsement of everything that Dr. Lyons has just stated, particularly in relation to the endorsement of the budget he has proposed in his statement, and the reasons for it.

##### PRESIDENTIAL COMMISSION ON CANCER, HEART DISEASE, AND STROKES

Now, as you know, in his health message to Congress, earlier this year, our President indicated that cancer, heart disease, and strokes have stubbornly remained leading causes of death, and they now afflict over 15 million Americans. Indeed, two-thirds of all Americans now living will ultimately suffer or die from one of these diseases. So he was impressed, and brought out very strongly the magnitude of this problem.

Then he established shortly afterwards a Commission on Heart Disease, Cancer, and Strokes, to recommend steps to reduce the incidence of these diseases, through the development of new knowledge, and through more complete utilization of medical knowledge that we already have.

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This Commission came into being after he announced the membership of this Commission and asked that I be Chairman of it, which I very humbly accepted.

He presented to this Commission a very stirring message at the time he met with the Commission for the first time, and brought to them a very strong challenge, and this has led to the Commission's proceeding as indicated.

I thought it might be well to provide a progress report of the Commission's activities for the record.

Senator HILL. It will be included in the record following your statement, Doctor. We are glad to have that.

### EFFECTIVENESS OF RESEARCH PROGRAM

Dr. DeBAKEY. Now, Mr. Chairman, from time to time questions are raised about how effective our research program is in the translation of this knowledge to the relief of these very grave diseases, indeed, these killers, that cause such great suffering in our population.

I thought you might be interested in two illustrations which I brought along, which help to I think bring out the great importance of research and its final translation of knowledge to the relief of suffering.

On the basis of research largely supported by funds through the National Institutes of Health, particularly the National Heart Institute, as well as funds from certain of our private philanthropic organizations, it was possible to develop forms of treatment in the surgical field for certain specific cardiovascular diseases that we have believed to be very effective.

Now, certain of these diseases have a baseline of natural course that had been developed prior to the development of these diseases, so that we have good information, good data, that will give us some idea of what the life expectancy of a patient is with some of these diseases.

### ANEURYSMS OF ABDOMINAL AORTA

One of these happens to be aneurysms of the abdominal aorta. That is really a dilation as a result of weakening of the the walls. A great majority of these are caused by arteriosclerosis.

Senator HILL. We learned that in old times with our automobile tires. That happened just before the blowout.

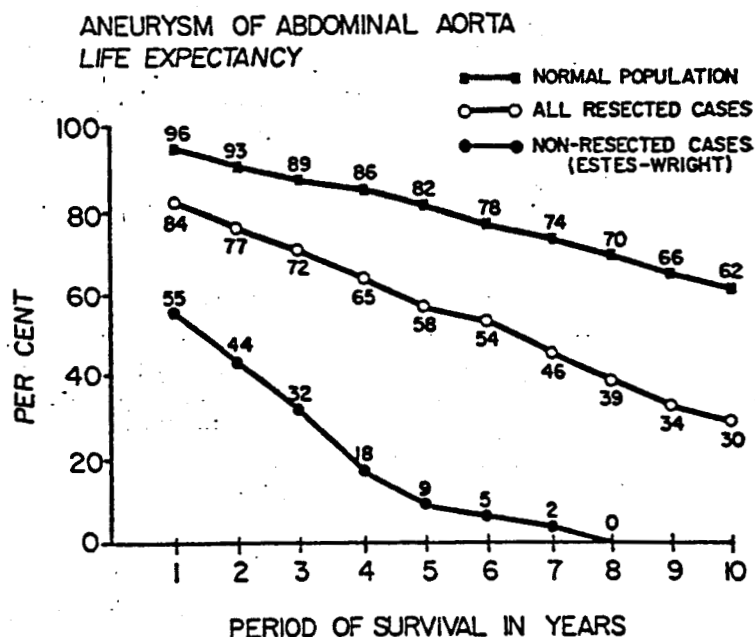
Dr. DeBAKEY. That is right. This is exactly what happens with an aneurysm that causes a patient's death.

### CHARTS SHOWING RESULTS OF THERAPY

I have a chart here, a graph, based upon some unpublished data, based upon our own experience, which I think strikingly illustrates the results of this form of therapy.

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(The information referred to follows:)



Dr. DeBAKEY. As you can see from the lower line in this graph, the natural course of the disease is shown in that lower line, and as you will notice, at the end of 5 years after the diagnosis of the disease in patients, 91 percent of these patients were dead.

This was the situation before we developed the form of therapy we thought was effective in the treatment of this disease.

### SURGICAL TREATMENT FOR ANEURYSM

The second graph line from the top shows our own experience. And as you will notice, a little less than two-thirds of those patients operated upon by this method were still alive at the end of 5 years.

Indeed, if you will look at the two top lines, the top line representing the normal population, the line for expectancy in the normal population, and the second line, representing the patients who had the surgical treatment for the aneurysm, the lines fairly closely parallel each other.

The drop in the two lines, of course, is represented by the early or operative mortality resulting from the deaths that occur as a consequence.

So that once a patient recovers from the operation—and I might say we now have reduced this operative mortality to less than 5 percent—

Senator HILL. Less than 5 percent?

Dr. DeBAKEY. Less than 5 percent. The chances of that patient following the normal course of normal population survival is very good.

So that we can now say that this form of therapy has resulted, in a sense, in the cure of this patient from the disease and his ability to live a relatively normal life.

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There are individuals who are leading a normal life.

So here is very good evidence of the value of research having been translated from the laboratory into the hospital and the application to a patient.

Senator HILL. Of course, without research, this would not have been possible.

Dr. DeBAKEY. That is right.

Senator HILL. Sometimes you have a piece of luck, as you did with penicillin.

Dr. DeBAKEY. Even that came out of the laboratory.

Senator HILL. Yes, that came out of the laboratory, but was there not some luck there, perhaps?

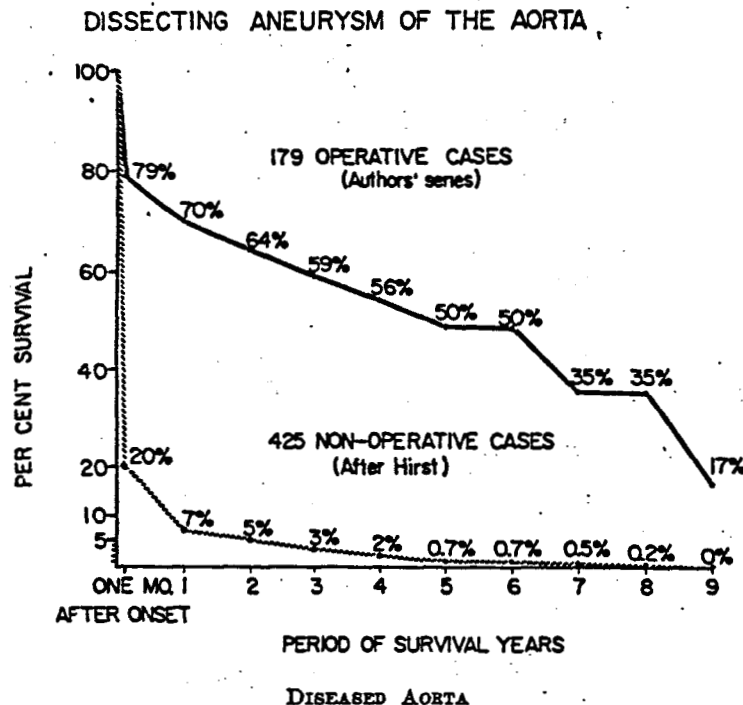
Dr. DeBAKEY. You might call it serendipity.

Senator HILL. Right. I have to be careful. Here is one of our great pioneers in penicillin, Dr. Lyons. But to say the least, this came in a different way, did it not?

Dr. DeBAKEY. It came in a different way.

Now, another very striking example is illustrated in another form of this disease.

(The information referred to follows:)



Dr. DeBAKEY. This differs from the other forms in the sense that it is not caused by arteriosclerosis, but by an unknown factor, in which the disease rests in the wall of the aorta, occurs mostly in the aorta in the chest, frequently near the heart, and is a very highly lethal disease.

As you possibly know, one of our distinguished Senators, Senator Kefauver, died not long ago from this disease.

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Senator HILL. Yes.

Dr. DeBAKEY. Seventy-five percent of these patients die within a few days after the onset of the disease.

And if you will look at this chart, Mr. Chairman, you will see, in the lower line, the experience that is based upon studies, and good studies, by a man by the name of Hirst who showed that the natural course of the disease was as you see by this line, that 93 percent of the patients, were dead within a year after the onset of the disease, and, as you see, less than 1 percent of the patients were still alive 5 years later.

### RESULTS OF TECHNIQUE DEVELOPED BY RESEARCH

In our own experience with the surgical treatment of this condition, which, again, was based upon research brought forth from the laboratory, more than half of these patients are alive at the end of 5 years.

Many of these patients I know personally very well, because they are physicians who are back practicing and leading productive, normal lives.

So here again you see a very striking example of the value of medical research in providing knowledge which ultimately has been brought to patients suffering from disease.

Senator HILL. Doctor, do you find this condition more in cases of athletes, those who in their younger years have been athletic?

Dr. DeBAKEY. At one time, we thought that was true.

Senator HILL. What has experience shown?

### DISEASE OF UNKNOWN ETIOLOGY

Dr. DeBAKEY. As we have learned more about this disease and studied more individuals, we find it does occur in others that have not been very active. It occurs in a certain proportion of women, for example.

It is a disease of unknown etiology, like so many of these vascular diseases; and despite the fact that we do not know the cause of many of these conditions, research has provided us means of controlling some of them and dealing with them.

And, of course, ultimately we hope that research will provide us with knowledge concerning their etiology, so that we can apply appropriate preventive measures. This is our ultimate goal.

But in the meantime, of course, people are dying of these conditions, and we must find ways and means of dealing with the problem, both from a medical and a surgical standpoint.

I hope Dr. Stamler will indicate some of the measures we are using from a medical standpoint to control some of these diseases.

But I thought it might be of interest to you to see some of these rather striking examples.

Senator HILL. They tell a story, certainly.

Dr. DeBAKEY. Yes.

### COMMUNICATIONS TO PUBLIC

You were saying earlier that we must communicate to the public what the potentialities of research may be. I think that this is a very important thing. As a matter of fact, in the President's Com-



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mission, as you will see from the report I submitted to you, we have established a subcommittee of this Commission to concern itself with communication, communication not only from scientist to scientist, from scientist to physicians practicing, but communication to the public.

Senator HILL. Good.

Dr. DeBAKEY. Because an enlightened public, in terms of understanding the value of research, can do a great deal along this line, as well as in the proper management and control of disease.

In Dr. Lyons' statement, and earlier, in the testimony of both Dr. Farber and Dr. Lee Clark, recommendations were made concerning research centers.

### VALUE OF RESEARCH CENTERS

As you know, your committee determined the value of research centers on the basis of information you received both from testimony and from other sources, such as the so-called Box-Jones Committee, a committee you established. Ultimately a program got underway within the National Institutes of Health to support so-called clinical centers.

I believe that this program, in general, has been successful.

### LIMITATION DETERRING PROGRAM

However, there are limitations which deter the program from going ahead full steam. This past year, I had the opportunity to be a member of a committee which was requested by the National Advisory Heart Council to study the center programs of the Institute. After our committee report, the Council came up with a general recommendation of which I would like to present certain portions for the record.

Senator HILL. Please do.

Dr. DeBAKEY. The meat of the recommendation is contained in the following statement:

The National Advisory Heart Council considered the administrative devices by which research and training activities are being supported by the National Heart Institute, particularly the program of cardiovascular clinical research centers for which Congress has appropriated specially earmarked funds. Also it has considered the problem of the emphasis that should be given to clinical investigation and investigations at the basic science levels and the important interrelation between them.

The Heart Council believes that an improved grant mechanism should be established for the support of centers of identified research activity in the cardiovascular field, which could include coordinated researchers in the various clinical and basic science disciplines. These cardiovascular research centers would aim to bridge the gap that presently exists to a considerable extent between scientists in the areas of clinical medicine, veterinary medicine, epidemiology, the biological sciences, and the physical and mathematical sciences.

A major block in the development of an adequate cardiovascular research center program is the lack of space and facilities which, to the greatest extent, constitutes a bottleneck because of the unavailability of funds to meet the requirements of the research facilities program at the National Institutes of Health.

The Council therefore specifically recommends:

(1) That the concept of the clinical research center in the line item budget be broadened to include other research disciplines and resources utilized in the study of cardiovascular diseases, and that the term "cardiovascular research centers" be substituted for the term "clinical research centers."

(2) That funds be made available to the Institute for construction of the new facilities required to meet the needs of an adequate cardiovascular research center program.

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I would like to say Senator Hill that I support this statement strongly. One point I would like to mention is that the Council did not spell out the words "stroke" centers in this recommendation but in discussion with Council members I have been told that strokes are considered as a part of the term cardiovascular, but to make it clear for the record I would recommend that the word strokes be included in this general term.

These centers provide the means and facilities for bringing together the various scientific disciplines that are needed to attack these problems properly, both from the standpoint of the application of scientific methodology and research and in the management of the patient himself.

We strongly urge that consideration be given to the establishment of these research centers.

The sum of \$17,400,000 is included in the budget to be used for these purposes. This would be a start, but over a period of years much more would be needed.

### STUDY OF CENTERS

I can tell that from the progress report of the President's Commission, consideration by a special committee has been given to a very intensive study of these centers, and I am convinced that they will come out with some kind of report and recommendation regarding establishment of this form of center in these areas.

### ARTIFICIAL HEART PROGRAM

Dr. Lyons referred to the artificial heart program. This happens to be a matter that is very close to my heart, because I have been intensely engaged in a program of this kind in our own institution.

I have knowledge about the work going on in a number of other institutions. There is increasing interest in the feasibility of this project. The recognition now by most individuals who have had some experience with investigation of this program is that this is not a pancrea, that it is a definitely feasible program.

Indeed, I am so convinced of the ultimate feasibility of this program that I would say if we put as much effort and support into this program of putting an artificial heart in an individual, by the time that the people who are concerned with putting a man on the moon succeed, we would also be successful.

I might say from our own standpoint, I am inclined to believe that this is more important than putting a man on the moon, as important as that is.

Senator HILL. We might have need of something like this, and we have no particular desire to go to the moon, do we?

Dr. DEBAKEY. I am sure that the individual, the citizen, Mr. Chairman, who has need for that kind of replacement of heart function, because his heart is giving out, would be far more interested in seeing that developed than putting that man on the moon.

### ROLE OF INDUSTRY IN HEART PROGRAM

One of the most important approaches in a developmental program like the mechanical heart or putting a man on the moon—and here they are very close together—is to explore the role that could be played

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by industry in developing materials that are not now available. Our artificial heart valves and the linings of our prototype artificial hearts are made from plastics which were designed for other purposes. There is much room for improvement. We need the development or modification of intricate electronic devices for sensing the needs of the body for more or less blood under given conditions of exercise or rest, so that they can tell the heart to pump slower or faster. We have no intention of keeping the user of an artificial heart forever in bed. The skills to develop these items are available to some extent in academic institutions but the resources of industrial organizations can make a tremendous contribution to these efforts.

We also need sound advice for the detailed long-range planning of the artificial heart in its various forms. This requires experts in other fields than biology, working with biologists and surgeons, physiologists to set up standards, specifications and goals. The Heart Institute has explored the cost of such a study and estimates it would take about 20 man-years to cover the situation properly—this would be about a million dollars. This would use up about half of the \$2 million proposed in our budget for artificial organs. Every year the start of this program is delayed means the loss of lives that could ultimately be prolonged in useful and happy pursuits.

So that I would like to strongly urge that consideration, and favorable consideration, be given to the recommendations Dr. Lyons made in his budget request for this program.

I am sure that we will see a stepped-up, intensive effort made in this field.

There is another topic which I would like to bring to your attention, Mr. Chairman, and a matter which I know you have long been interested in.

### NATIONAL MEDICAL LIBRARY SYSTEM

Indeed, I think this Nation should be most grateful to you for the leadership that you provided in establishing the National Library of Medicine. This has provided great leadership in our country, in an area which has been very badly needed.

You will recall that I spoke about this matter on previous occasions before your committee.

Senator HILL. Yes, I do, indeed.

Dr. DEBAKEY. I think that the advancement of medical research is now seriously threatened by a breakdown of our National Medical Library system.

You recall that I wrote an editorial about this.

Senator HILL. I remember. A very fine editorial.

Dr. DEBAKEY. This matter has I think become increasingly urgent, so much so that I think it has really reached a most critical stage at the present time.

Within its limited resources, the National Library of Medicine has provided leadership and services to our Nation's institutions. It is now quite clear, however, that the seriousness of the problems facing our medical libraries requires the development of an extramural program designed to meet the urgent and critical need.

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### AREAS NEEDING FINANCING UNDER LIBRARY

It is for this reason, Mr. Chairman, that I would propose that the following activities, which I have prepared in this statement, and which I would like to submit for the record, be financed through increased appropriations for the National Library of Medicine.

We are now in the position, or we should now be in a position, to move quickly in this area.

I have identified these areas, and they will be presented for the record.

They are concerned with the problem of strengthening the Nation's medical libraries, utilizing existing authorities.

A second area is concerned with project research, a third area is concerned with training and fellowships, a fourth with publication and translation, and the final area is concerned with the need for additional legislation in order to provide library assistance and to permit construction for regional library systems.

Senator HILL. I may say that I was in conference with Dr. Cummings, whom you know very well, of course, only Monday morning of this week, talking about this very legislation to which you have referred, and we are now in the process of having a draft made, and we would be very happy to have your good counsel and advice and recommendations when we get a tentative draft of it.

Dr. DEBAKEY. Thank you, Mr. Chairman. I assure you that I am most deeply interested in this. I think it is an extremely important program.

### EXTRAMURAL PROGRAM

Now, the extramural program, which I am submitting here, has a budget of approximately \$2½ million, and this you will see in the statement which I would like to submit for your consideration for the record.

Senator HILL. We are very happy to have that, Doctor.

Dr. DEBAKEY. Having heard Dr. Farber's testimony on this next matter, I shall not go into details, because he gave them.

I would simply like to state that I endorse the statement that he made most heartily, and I think it is extremely important that this budget not be reduced to the point that has been indicated, that it be maintained and strengthened to the point recommended by Dr. Farber.

I think that his documentation of the need for this program already exists. If there is further documentation needed and of importance, it can be provided.

But this was presented previously in testimony to you at the time that you heard testimony. The experience then with it has provided additional evidence of its great need.

I have in my own personal experience a very good example of its importance.

### METABOLISM STUDY IN SWEDEN

We have with one of the leading pioneering workers in the field of metabolism, Dr. Evans Horning, who is being supported in the establishment of an institute. Recently there was developed in Sweden, by a man by the name of Sindeborg, a rather unique instrument, but of great importance to this field of activity.

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Dr. Evans Horning informed me that this would accelerate the whole pace of development in this field tremendously. And we made great efforts to get this instrument in our own place.

This is a very good illustration of the importance of international research. This has been supported to some extent by our own program.

And here is research going on in a foreign country, supported partly by our own funds, which is coming back to us, to accelerate the program and developments in our own area.

There are many illustrations of the importance of this program, and I would like to add my emphasis to the words supporting this activity by Dr. Farber, given earlier.

### GENERAL RESEARCH PROGRAM

Dr. Farber also referred to the general research support program. As you know, this was established following the recommendation which your committee presented, under the chairmanship of Mr. Jones.

I have had close association with this program, through one of the committees that I have been on in the National Institutes of Health, and have followed it very closely.

We had recently the opportunity to study the effects of this program, and I can assure you that, having sampled the medical institutions in this country, who have been receiving grants under this program, there is tremendous enthusiasm for its great value within the institutions.

The need, of course, is to step up this program.

I would like to again indicate, as I did last year, and as Dr. Farber indicated, that every effort be made to allow this program to be stepped up to the legal limit of 15 percent. This, Mr. Chairman, constitutes my testimony. May I say again that it is always a great pleasure to appear before this committee in support of activities that I think are of greatest importance to the American public.

Senator HILL. We are always very happy to have you here, Doctor, because you always bring us a most informative, most helpful, and challenging statement. You have been of tremendous help to this committee, and we certainly appreciate your being with us.

### INTERNATIONAL RESEARCH

Speaking about the international research, as you know, the bill we passed in the Senate was a good deal better bill, I may say, than the one in the House. They cut out some of the important provisions in the bill.

But I do not suppose, with the exception maybe of our friend Dr. Howard Rusk, who is in the field of physical medicine and rehabilitation—as far as I know, you have traveled around the world more than anybody, perhaps, have you not?

Dr. DeBAKEY. There are very few places in the world I have not been, Mr. Chairman.

Senator HILL. So you have had an opportunity at firsthand to see what the possibilities are in these distant countries across the seas. Is that not right?

Dr. DeBAKEY. Yes; at very close hand. I have had the opportunity to see what actually our own funds are doing in many of these laboratories.

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And it has been most gratifying to see the very great value that these funds have provided in stimulating research, which has been of tremendous value to us.

This comes back to us in the form of new knowledge, new training, new instrumentation, that accelerate our own program tremendously and enriches it.

Senator HILL. We certainly appreciate this testimony, Doctor. We do, indeed.

(The information referred to follows:)

### MEDICAL LIBRARY SYSTEM

The advancement of medical research is now threatened by a breakdown of our Nation's medical library system. Within its limited resources the National Library of Medicine has provided leadership and services to our Nation's medical schools and research institutions. However, it is quite clear that the seriousness of the problems facing medical libraries requires the development of extramural programs designed to meet these urgent and critical needs.

Therefore, I propose that the following activities be financed through increased appropriations for the National Library of Medicine, which is now in the position to move quickly in the direction of upgrading our Nation's medical library resources.

#### *A. A program for strengthening the Nation's biomedical libraries utilizing existing legislative authorities*

Under existing legislative authorities the National Library of Medicine would be in a position to make a significant effort to relieve the appalling deficiencies of the Nation's biomedical libraries provided funds were available for implementing these authorities.

I. *Regional resource centers.*—As a first effort, investigations would be undertaken to determine the logistical steps for establishing a nationwide complex of regional resource centers. (To mount such a study a minimum of \$150,000 would be needed.) Such a complex, while itself not adding to the existing resources of the individual libraries, would greatly enhance their effectiveness in meeting the requirements of the medical and scientific communities by opening the possibility of the sharing of their collective resources. In order for a complex of regional centers to make its fullest contribution, it is necessary that additional resources (including books and journals) be added to those libraries which would be included as components to bring them to minimal standards for effective cooperation in the network and allow them to serve as demonstration centers. Modern methods of transmission of information focusing on the form as well as the means of transmission also must be instituted as part of the operation of the regional complex. (To make available these initial resources would require \$350,000.)

II. *Project research.*—The solution of problems encountered in the development and functioning of library-based or library-related information systems demands a comprehensive program of project research. Such a program of research including investigations of access, storage and retrieval, and communication of medical information to its ultimate user, the medical scientist or practitioner, is urgently needed. (Recognizing the complex and expensive nature of research on data storage and retrieval, approximately \$1 million is needed to initiate the program.)

III. *Training and fellowships.*—A central feature in any program for bringing the Nation's biomedical libraries to standards such that they can make their potentially great contribution to the health of our people is the provision of adequately trained personnel in terms of both numbers and quality of training. The first and greatest need in this area is for training a group of individuals capable of themselves assuming positions of leadership in teaching and research in modern techniques of medical librarianship and information handling. Needs for staffing of libraries and information systems of existing and new medical centers for direct service is of almost equal urgency. (A limited program of training grants and fellowships could be initiated for \$600,000.)

IV. *Publication and translation.*—The NLM presently provides support for scientific publications to improve biomedical communications, both national and international. An increase of \$150,000 over the present program level is needed

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to act on the dynamic needs in abstracting, indexing, critical reviews, and translations.

### *B. Need for Library Assistance Act*

**I. Construction.**—The above activities adequately financed would provide an effective stimulus to the solution of a number of problems of medical libraries through the support of training and research programs. However, present NLM authorities do not include grant programs for the construction of library facilities, and appropriate space is one of the most urgent problems of medical libraries. Because of the central role of the library as a learning resource in the modern medical center for research, education, and clinical activity, it is essential that specialized modern facilities be developed. In January 1963, the Association of American Medical Colleges indicated that 75 established and 11 newly developing medical schools were in need of construction for new or expanded facilities.

**II. Regional medical library systems.**—In order to provide support for the establishment and operation of a nationwide regional medical library system in future years, new legislative authority is required. The investigation into the form and operation of such a complex would be initiated in fiscal year 1965 should funds become available. Full development of such interrelated systems, however, would have to await additional authority.

**III. Resources.**—Numerous studies by outstanding experts in recent years have shown that most biomedical libraries fall far below established standards necessary for rendering needed services to the workers in the health field. Assistance to the libraries in the form of a program of broad resource assistance would do much in alleviating this problem. This effort would take the form of grants for a limited period of time which would decrease annually to encourage the assumption of support by local agencies. Books, journal subscriptions, salaries, and equipment and supply costs should be included in such grants.

Utilizing existing authorities, the program has been structured initially on a four-point plan. The funds necessary to implement the program in the first year are as follows:

#### *Extramural program plan*

I. Training and fellowships.....	\$800,000
II. Regional library complexes and resources.....	500,000
III. Research and development.....	1,000,000
IV. Publications and translations.....	150,000
Program direction, review, and approval of grants and administration of grants and contracts (including 11 positions).....	250,000
<b>Total.....</b>	<b>2,500,000</b>

#### PRESIDENT'S COMMISSION ON HEART DISEASE, CANCER, AND STROKE PROGRESS REPORT, JUNE 15, 1964

In his health message to Congress, early in 1964, President Lyndon B. Johnson indicated that "cancer, heart disease, and strokes stubbornly remain the leading causes of death in the United States. They now afflict 15 million Americans—two-thirds of all Americans now living will ultimately suffer or die from one of them.

"I am establishing a Commission on Heart Disease, Cancer, and Strokes to recommend steps to reduce the incidence of these diseases through new knowledge and more complete utilization of the medical knowledge we already have. The Commission will be made up of persons prominent in medicine and public affairs. I expect it to complete its study by the end of this year and submit recommendations for action."

On March 7, the President announced the names of the members of this Commission as follows:

Chairman: Dr. Michael DeBakey, professor and chairman, Department of Surgery, Baylor University College of Medicine, Houston, Tex.

#### MEMBERS

Dr. Samuel Bellet, professor of clinical cardiology, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pa.  
Barry Bingham, editor and publisher, Louisville Courier-Journal, Louisville, Ky.  
John M. Carter, editor, McCall's magazine, New York, N.Y.

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Dr. R. Lee Clark, director and surgeon in chief, Anderson Hospital and Tumor Institute, Houston, Tex.  
Dr. Edward W. Dempsey, dean, School of Medicine, Washington University, St. Louis, Mo.  
Dr. Sidney Farber, director of research, Children's Cancer Research Foundation, and professor, Harvard Medical School, Boston, Mass.  
Dr. Marion S. Fay, former president and dean, the Women's Medical College of Pennsylvania, Philadelphia, Pa.  
Marion B. Folsom, director, Eastman Kodak Co., Rochester, N.Y., former Secretary of the U.S. Department of Health, Education, and Welfare.  
Emerson Foote, chairman of the board, McCann-Erickson, Inc., New York, N.Y.  
Gen. Alfred M. Gruenther, immediate past president, American National Red Cross, Washington, D.C.  
Dr. Philip Handler, professor and chairman, Biochemistry Department, Duke University Medical Center, Durham, N.C.  
Arthur O. Hanisch, president, Stuart Co., Pasadena, Calif.  
Dr. Frank Horsfall, Jr., president and director, Sloan-Kettering Institute for Cancer Research, New York, N.Y.  
Dr. J. Willis Hurst, professor and chairman, Department of Internal Medicine, Emory University School of Medicine, Atlanta, Ga.  
Dr. Hugh H. Hussey, director, Division of Scientific Activities, American Medical Association, Chicago, Ill.  
Mrs. Florence Mahoney, cochairman, National Committee Against Mental Illness, Washington, D.C.  
Dr. Charles W. Mayo, emeritus staff surgeon, Mayo Clinic, Rochester, Minn.  
Dr. John S. Meyer, professor and chairman, Department of Neurology, Wayne State University College of Medicine, Detroit, Mich.  
James F. Oates, chairman of the board, Equitable Life Assurance Society, New York, N.Y.  
Dr. E. M. Papper, professor and chairman, Department of Anesthesiology, College of Physicians and Surgeons, Columbia University, New York, N.Y.  
Dr. Howard A. Rusk, professor and chairman, Department of Physical Medicine and Rehabilitation, New York University Medical Center, New York, N.Y.  
Dr. Paul W. Sanger, surgeon, Charlotte, N.C.  
Gen. David Sarnoff, chairman of the board, Radio Corp. of America, New York, N.Y.  
Dr. Helen B. Taussig, emeritus professor of pediatrics, Johns Hopkins University, Baltimore, Md.  
Mrs. Harry S. Truman, Independence, Mo.  
Dr. Irving S. Wright, professor of clinical medicine, Cornell University Medical College, New York, N.Y.  
Dr. Jane C. Wright, adjunct associate professor of research surgery, New York University Medical School, New York, N.Y.

### COMMISSION'S ASSIGNMENT

On April 17, 1964, the Commission held its first meeting in the White House. The President addressed the Commission as follows:

"Ladies and gentlemen, on beautiful days like this, the President and school-boys have a hard time staying indoors. I think we would set a good example for the Nation, and we would advance the cause that brings us together, if we would take time for a brisk walk outside this morning. I am a subscriber to the view once expressed that if you want to know if your brain is flabby, you better feel your legs.

"Health is something that we treasure in this house where you are gathered this morning, and I know it is treasured in every house throughout our land and around the world. It was said several centuries ago, health is the greatest of all possessions. A pale cobbler is better than a sick king.

"The work that you have begun today is work in which I have the keenest and the greatest and the most personal interest. You are here to begin mapping an attack by this Nation upon the three great killers, the three great cripplers—heart, cancer, and stroke disease. These three account for the majority of deaths and much of the serious disability which strikes our people every year.

"I have asked you to undertake these three objectives: First, to measure the full magnitude of the impact of these diseases upon the Nation; second, to evaluate our resources for acquiring new knowledge that we already have; third, to identify the obstacles which stand in the way of advancing knowledge and give use guidelines on overcoming those obstacles.



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"To this group I do not think I need to tell you how vital this is. Unless we do better, two-thirds of all Americans now living will suffer or die from cancer, heart disease, or stroke. I expect you to do something about it. Five million Americans a year are struck down in the prime of life by heart attacks, often fatal. Every two minutes cancer strikes a man or a woman or a child in this country. Every year strokes leave 200,000 Americans dead and another 2 million incapacitated.

"I want us to put our great resources—and they are unlimited—to work to overcome this. We can, and because of the work you will do, I believe we will. So let me say this: I know there are some differing viewpoints about the prospects for success in these fields, but from what some of you on this Commission have reported to me, and from some other sources that I believe in, I think our goals are in sight. It is well within the range of reasonable expectation that work being done now in regard to controlling growth of cells in the human body will bring decisive victories over heart disease and cancer and strokes.

"The point is, we must conquer heart disease, we must conquer cancer, we must conquer strokes. This Nation and the whole world cries out for this victory. I am firmly convinced that the accumulated brains and determination of this Commission and of the scientific community of the world will, before the end of this decade, come forward with some answers and cures that we need so very much. When this occurs—not 'if,' but 'when,' and I emphasize 'when'—we will face a new challenge and that will be, What to do within our economy to adjust ourselves to a lifespan and a work span for the average man or woman of 100 years?

"Knowing Government as I do, I am sure some President some day will be appointing a commission to study that very great problem, and I would be pleased to be that President. If you do your work well and if you do your work with dispatch, maybe I will have that privilege.

"I have often been reminded, myself, of Shakespeare's line, 'A good heart is worth gold.' I am glad mine is good now, and if the doctors and the Secret Service and my guardians in the press will just permit me to get my exercise, I intend to keep it that way.

"I want to thank you very much for beginning the work that I think will ultimately win the hardest fight that we have ever fought, and I would suspect that just as we look back on Lincoln's proclamation a hundred years ago, when he took the chains off the slaves, I would suspect that someday your grandchildren and great-great-grandchildren will be looking at this picture made this morning in this beautiful rose garden, all the thorns are inside, and see the leadership of 50 States who are willing to give their talents and their energies and their imaginations, and stay awake at night and roll over and go get a glass of water and come back and think some more on how to get the results that we know are within our reach.

"In my judgment, there is nothing that you will ever do that will keep your name glorified longer, and that will make your descendants prouder than this unselfish task that you have today undertaken to get rid of the causes of heart and cancer and stroke in this land and around the world. What can be more satisfying than to feel that you have preserved not a life, but millions of them, for decades. I am here to say to you that while we are interested in the food stamp plan, we are interested in medicare for the aged under social security, we are interested in the civil rights bill that we consider most essential to our leadership in this country and in the world, we are interested in the pay bill that will keep our good civil servants here, we are interested in the immigration bill that will permit families to join each other, and we are interested in the poverty bill that will take our boys out of the poolhalls and out of the slums and out of the juvenile delinquency centers of the Nation—we are interested in all of those things.

"There is nothing that really offers more and greater hope to all humanity and to preserving humanity than the challenge in the task that you have undertaken. You have among you some of the great doctors, some of the great public servants of our time. Somehow, someday, sometime, you are going to find the answers, and I hope it will be soon.

"Thank you."

The Commission accepted the assignment, as follows:

We accept the President's challenge with a deep sense of responsibility and a high degree of enthusiasm. We have been given an unparalleled opportunity to alleviate suffering and prevent needless death.

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During the past decade and a half, an unprecedented program of medical research has been instituted on a nationwide scale. Through cooperative endeavors of public and private organizations—voluntary health agencies, universities, research institutions, medical scientific communities, individual philanthropists, and Federal, State, and local governments—this program has already proved its worth. Indeed, greater advances have been made in these fields of endeavor than through all the previous years of recorded history. Many types of diseases, which only a decade ago were considered hopeless, are now completely curable. In many respects, we are in the midst of an exciting biomedical revolution.

Yet so much remains to be done.

### AREAS OF INTEREST

In fulfilling the historic mission assigned to us by the President, we have agreed to consider the following areas of interest:

#### 1. *The magnitude of the problem .*

This will include not only a reassessment of present mortality and disability statistics, but a new appraisal of the costs of these long-term illnesses to our Nation.

Is our network of collecting statistics adequate for obtaining the information necessary for the planning of programs to accomplish our goal? If not, what means must be found to provide the required information?

Is there a need for carrying out special surveys of the prevalence of these diseases on a national scale? Studies of mortality indicate that different parts of the country have different death rates from some forms of these diseases. Does this indicate differences in prevalence of these diseases? If so, what are the reasons? Do they indicate that different ways of life influence the prevalence?

#### 2. *What is the present state of the art?*

What body of research knowledge do we now possess in the diagnosis, treatment, and rehabilitation of victims of heart disease, cancer, and stroke?

Is there a national scientific consensus of what are the most effective measures in the current treatment of these diseases? We are aware of the fact that the medical literature is replete with claims for one mode of treatment as compared to another. Is there not a need for mass evaluations and field trials of existing therapies to test their efficacy—analagous in nature to the field trials which proved the effectiveness of virus vaccines against poliomyelitis?

#### 3. *Utilization of knowledge*

Are we fully utilizing the research knowledge which we are currently developing in our universities and research institutions throughout the country? What are the barriers that delay public acceptance and utilization of the results of medical research?

There is a strong preliminary evidence to the effect that much of this information is not sifting down to the average doctor in private practice.

For example, the American Cancer Society has repeatedly noted that we could save the lives of 50 percent of all victims of cancer if our doctors in private practice had available the latest diagnostic tools developed by research. Early detection of stroke could lead, in many cases, to successful surgical intervention and, in many others, to considerable amelioration and rehabilitation if the necessary diagnostic procedures were available to the majority of American doctors.

In the case of all three of these diseases, why are these diagnostic procedures not widely disseminated?

#### 4. *Research*

What are the obstacles to the acquisition of the new research knowledge so obviously needed to cut down what President Johnson has referred to as "the burden and incidence of these diseases"?

To what degree is the problem a financial one? A lack of adequate public and private support, preventing the necessary acceleration of our national medical research endeavor.

We are mindful of the fact that our medical research effort started from almost ground zero at the close of World War II. The developments since then indicate that the American people have a strong desire to mount a research offensive against the major diseases.

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A recent report of the Public Health Service dates the real beginning of our National Government's effort in medical research to 1947, when Federal expenditures for medical research approximated \$27 million.

That same report notes that all Federal medical and health-related research expenditures from 1947 through 1963 totaled only \$5 billion, or roughly 6 percent of the \$80 billion made available over the same period for all federally supported research and development.

Put another way, this total 17-year medical research expenditure is less than the budget of the National Aeronautics and Space Administration for the current year.

Is medical research, then, getting an equitable share of our total national research and development expenditures?

### 5. Manpower

Over the past decade, we have been deluged with impressively documented reports from the Executive branch of our government, from the Congress and from distinguished scientific organizations such as the National Academy of Sciences emphasizing the point that severe shortages of research and clinical manpower plague medical research generally, and are particularly pressing in the fields of heart disease, cancer, and stroke.

In "Manpower for Medical Research," a 1962 report issued by the National Institutes of Health at the specific request of Congress, the Director of the NIH estimated that we would have to double our medical research manpower by 1970 if we are to continue the progress made during the previous decade. The NIH report noted that "the future expansion of medical research will be staffed only as a result of a steadily expanding national effort, combining private and public resources, to train manpower specifically for medical research."

How are we to achieve these widely accepted manpower goals?

How adequate is our corps of professional and supporting health workers who will bring as expeditiously as possible the results of research to the people?

How much must we increase the training capacities of our universities and schools of the health professions?

How can we attract more young people into medical and related scientific careers?

How adequate are our present stipend and fellowship programs for the training of young people in these fields?

### 6. Facilities

During the period from 1945 to 1955, when our national medical research effort was taking its first halting steps, the shortage of adequate research facilities was a major, if not the major, obstacle to an expansion of our research effort in the fields of heart disease, cancer, and stroke.

Voluminous hearings were held by congressional committees on this subject over a period of 4 years, resulting in 1956 in the passage of the Health Research Facilities Act.

Under the aegis of this legislation, the Federal Government has provided several hundred million dollars in matching aid over the past 8 years for both the construction of new research facilities and the remodeling of existing ones.

However, this legislation has always imposed a rigid ceiling on the amount of Federal aid. Because of the present ceiling of \$50 million a year, the Congress, although deeply aware of the shortage of needed facilities, is unable to appropriate sufficient moneys to have any appreciable impact upon the present backlog of close to \$200 million in scientifically approved applications for research construction from universities, hospitals, and nonprofit foundations throughout the country.

In every case, the construction application is accompanied by detailed assurance that the local institution will provide 50 percent of the total construction money. In past years, local and private support under this program has exceeded the Federal investment by a ratio of better than 2 to 1.

Is there a need to amend the Health Research Facilities Act?

As far back as 1959, the Committee of Medical Consultants appointed by the U.S. Senate reported that the requirement of 50 percent matching from local institutions was unduly severe. The Committee of Consultants contended that only the wealthier States and the larger universities could participate to a significant degree in this program. As a result, there have been salvos of criticism from congressional and other sources to the effect that our national medical research effort is increasingly concentrated in our larger institutions of learning;

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that we are neglecting many small but highly competent institutions with excellent scientific credentials, but which do not possess the finances necessary to meet the rigid Federal matching requirement.

### 7. Communications

In recent years, the whole problem of better communications from the medical research community to the private physician, and to the general public, has come to the fore.

The Reorganization and International Organizations Subcommittee of the Senate Government Operations Committee, in many hearings and reports, has highlighted the problems created by our rapid accumulation of new research knowledge. It has focused particularly upon the extraordinary challenges created by the entrance onto the market of several hundred new drugs each year. It has called for a network of regional centers, using modern computer and other techniques, to bring new information on drugs and other medications to the family physician as rapidly as possible. It has also called for the more imaginative use of closed circuit television and medical films in closing the communications gap between the research investigator in the laboratory and the physician treating patients in the field.

Over and above the problem of better communications between the research investigator and the practicing doctor, there is the vast problem of providing better communications between the entire medical research community and the American people.

### ORGANIZATION AND ACTIVITIES OF THE COMMISSION

The Commission organized itself into the following subcommittees with the following chairmen:

Heart Disease: Dr. Irving Wright  
Cancer: Dr. Sidney Farber  
Stroke: Dr. John Meyer  
Research: Dr. Philip Handler  
Manpower: Dr. Edward Dempsey  
Communications: Mr. Emerson Foote  
Facilities: Mr. Arthur Hanisch  
Rehabilitation: Dr. Howard A. Rusk

The Commission established the following methods of operation:

1. The collection of information from all agencies and groups concerned with these diseases through letters, staff visits, etc.
2. The holding of hearings at which expert witnesses from the widest possible range of interests, both public and private, present their views and discuss the issues involved.
3. The preparation of the report and its recommendations and their submission to the President.

As of June 29, 1964, the subcommittees have held 19 days of meetings. Among those who have met with one or more of these subcommittees are:

Scott Adams, Deputy Director, National Library of Medicine, Bethesda, Md.  
Dr. Otis Anderson, American Medical Association, Washington, D.C.  
Daniel Bailey, Assistant to the Director, National Library of Medicine, Bethesda, Md.  
Dr. A. B. Baker, professor and chairman, Department of Neurology, University of Minnesota, Minneapolis, Minn.  
Dr. David Brand, Chief, Heart Disease Control Branch, Division of Chronic Diseases, Public Health Service, Washington, D.C.  
Dr. Clifford Cole, Chief, Neurological and Sensory Disease Service Program, Division of Chronic Diseases, Public Health Service, Washington, D.C.  
Dr. Russel W. Cumley, executive director, Medical Arts Publishing Foundation, Houston, Tex.  
Dr. Emerson Day, director, Strang Clinic, New York, N.Y.  
Dr. D. Denny-Brown, James Jackson Putnam, professor of neurology, Harvard Medical School, Harvard University, Boston, Mass.  
Dr. Harold S. Diehl, senior vice president for medical research and medical affairs, American Cancer Society, New York, N.Y.  
Dr. Paul Ellwood, executive director, Sister Elizabeth Kenny Foundation, Minneapolis, Minn.  
Dr. Kenneth Endicott, director, National Cancer Institute, Bethesda, Md.  
Dr. C. Miller Fisher, associate clinical professor of neurology, Harvard Medical School, Boston, Mass.

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Dr. Aaron Ganz, Head, Research Career Section, National Institute of General Medical Sciences, National Institutes of Health, Bethesda, Md.  
Dr. Louis Gerber, Chief, Nursing Home and Related Facilities Branch, Division of Chronic Diseases, Public Health Service, Washington, D.C.  
Dr. Eugene Guthrie, Chief, Division of Chronic Diseases, Public Health Service, Washington, D.C.  
Dr. Albert Heyman, professor of neurology, Duke University School of Medicine, Durham, N.C.  
Dr. Vane Hoge, American Hospital Association, Washington, D.C.  
Dr. Charles Huggins, Ben May Laboratory for Cancer Research, University of Chicago, Chicago, Ill.  
Dr. Charles Kane, professor of neurology, Boston University School of Medicine, Boston, Mass.  
Dr. Jay Hilary Kelley, Office of Science and Technology, Executive Office of the President, Washington, D.C.  
Dr. F. Ellis Kelsey, Special Assistant to the Surgeon General for Scientific Communications, Public Health Service, Washington, D.C.  
Dr. Norvin Kiefer, chief medical director, the Equitable Life Assurance Society, New York, N.Y.  
Dr. Ralph Knutti, Director, National Heart Institute, Bethesda, Md.  
Dr. Paul Kotin, Associate Director for Field Studies, National Cancer Institute, Bethesda, Md.  
Dr. Edward J. Kowalewski, chairman, Commission on Environmental Medicine, American Academy of General Practice, Kansas City, Mo.  
Dr. Lyndon E. Lee, Jr., Chief, Extra-VA Research Division, Department of Medicine and Surgery, Veterans' Administration, Washington, D.C.  
Dr. Joseph Leiter, Chief, Cancer Chemotherapy National Service Center, National Cancer Institute, Bethesda, Md.  
Dr. Herbert Lichman, medical and research director, Leukemia Society, Inc., New York, N.Y.  
Dr. Herbert Locksley, Department of Neurosurgery, University of Iowa School of Medicine, Iowa City, Iowa.  
Dr. Champ Lyons, professor of surgery, University of Alabama School of Medicine, Birmingham, Ala.  
Dr. H. Houston Merritt, dean, Columbia University College of Physicians and Surgeons, New York, N.Y.  
Dr. George E. Moore, director, Roswell Park Memorial Institute, Buffalo, N.Y.  
Dr. James O'Leary, professor and chairman, Department of Neurology, Washington University, St. Louis, Mo.  
Maurice Odoroff, Program Director, Institute of General Medical Sciences, National Institutes of Health, Bethesda, Md.  
Dr. Richard Orr, Director, Institute for Advancement of Medical Communication, Bethesda, Md.  
Dr. Irvine Page, director, Research Division, Cleveland Clinic, Cleveland, Ohio.  
Dr. Oglesby Paul, professor of medicine, Northwestern University School of Medicine, Chicago, Ill.  
Dr. Paul Q. Peterson, Associate Chief for Operations, Bureau of State Services, Public Health Service, Washington, D.C.  
Dr. Harry T. Phillips, director of the Division of Chronic Diseases, Massachusetts Department of Public Health, Boston, Mass.  
Dr. Lee Powers, associate director, Association of American Medical Colleges, Evanston, Ill.  
Dr. I. S. Ravdin, vice president for medical affairs, University of Pennsylvania, Philadelphia, Pa.  
Dr. Herbert Rosenberg, Chief, Resources Analysis Branch, Office of Program Planning, Office of the Director, National Institutes of Health, Bethesda, Md.  
Dr. Claire F. Ryder, Associate Chief for Care Services, Division of Chronic Diseases, Public Health Service, Washington, D.C.  
Dr. Joseph Sadusk, Medical Director, Bureau of Medicine, Food and Drug Administration, Washington, D.C.  
Dr. A. L. Saks, professor of neurology, State University of Iowa, Ames, Iowa.  
Dr. Harold W. Schnaper, Chief, Research in Internal Medicine, Veterans' Administration, Washington, D.C.  
Dr. James Shannon, Director, National Institutes of Health, Bethesda, Md.  
Dr. Murray J. Shear, Special Adviser, Intramural Research, National Cancer Institute, Bethesda, Md.

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Dr. John F. Sherman, Associate Director, Extramural Programs, National Institute of Arthritis and Metabolic Diseases, Bethesda, Md.  
Dr. M. B. Shinkin, professor of medicine, Temple University, School of Medicine, Philadelphia, Pa.  
Col. Robert Shira, Medical Corps, U.S. Army, Chief of Dental Service, Walter Reed Army Medical Center, Washington, D.C.  
Dr. Robert Siekert, Mayo Clinic, Rochester, Minn.  
Dr. Frederick L. Stone, Chief, Division of Research Facilities and Resources, National Institutes of Health, Bethesda, Md.  
Dr. A. N. Taylor, Department of Medical Education, American Medical Association, Chicago, Ill.  
Dr. James L. Troupin, director of professional education, American Public Health Association, New York, N.Y.  
Dr. T. Philip Waalkes, associate director for collaborative research, National Cancer Institute, Bethesda, Md.  
Dr. Shields Warren, professor, Cancer Research Institute, Boston, Mass.  
Mrs. Margaret West, Assistant Chief, Public Health Methods, Public Health Service, Washington, D.C.  
Dr. Robert W. Wilkins, professor and chairman, Department of Medicine, Boston University School of Medicine, Boston, Mass.  
Dr. Paul Zamecnick, director, John Collins Warren Laboratories of C. P. Huntington Hospital of Harvard University at Massachusetts General Hospital, Boston, Mass.  
Dr. Charles Gordon Zubrod, Director of Intramural Research, National Cancer Institute, Bethesda, Md.  
Dr. Vladimir Zworykin, RCA Laboratories, Princeton, N.J.

### STAFF

To support the work of the Commission the following staff was recruited:

#### STAFF DIRECTOR

Dr. Abraham M. Lilienfeld, professor and chairman, Department of Chronic Diseases, Johns Hopkins University School of Hygiene, Baltimore, Md.

#### EXECUTIVE SECRETARY

Stephen J. Ackerman, Associate Chief for Planning and Analysis, Bureau of State Services (Community Health), Public Health Service, U.S. Department of Health, Education, and Welfare.

#### STAFF ASSOCIATE

Dr. John D. Turner, Office of the Director, National Heart Institute, Public Health Service, U.S. Department of Health, Education, and Welfare.

#### STAFF ASSISTANTS

Dr. Nemat O. Borhani, head, heart disease control program, Bureau of Chronic Diseases, California Department of Public Health, Berkeley, Calif.  
Louis Carrese, Program Planning Officer, Office of the Director, National Cancer Institute, Public Health Service, U.S. Department of Health, Education, and Welfare.  
Dr. Maureen Henderson, associate professor of preventive medicine and Markle scholar, University of Maryland School of Medicine, Baltimore, Md.  
Dr. William L. Kissick, Assistant to the Special Assistant to the Secretary (Health and Medical Affairs), U.S. Department of Health, Education, and Welfare.  
Lealon E. Martin, Information Officer, National Heart Institute, Public Health Service, U.S. Department of Health, Education, and Welfare.  
Dr. Bayard Morrison, Clinical Branch, Collaborative Research, National Cancer Institute, Public Health Service, U.S. Department of Health, Education, and Welfare.  
Horace G. Ogden, Information Officer, Bureau of State Services (Community Health), Public Health Service, U.S. Department of Health, Education, and Welfare.